



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
841 Chestnut Building
Philadelphia, Pennsylvania 19107

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SUBJECT: Filtered/Unfiltered Groundwater Analysis
Risk Assessment Perspectives

FROM: Debra L. Forman, Ph.D. *D. Forman*
Senior Toxicologist, Technical Support Section (3HW13)

TO: Dick Willie
Hydrogeologist (Region I)

As mentioned in the attached draft Regional guidance document, the choice of unfiltered or filtered data from groundwater monitoring wells is critical to the development of scientifically and technically sound risk values. While the guidance outlines several issues of concern, it emphasizes that close interaction with trained hydrogeologists is imperative.

Oftentimes, risk assessors need to extrapolate monitoring well data to a scenario in which residents might drink the groundwater. Since residents generally do not filter their water prior to drinking and not all onsite groundwater is used for drinking, data from monitoring wells is needed to define the risk to a future resident. For these reasons, toxicologists generally agree that it is most suitable to default to unfiltered data from monitoring wells whenever possible.

However, we are all aware that there are times when either the database is limited or other considerations make it necessary to evaluate the useability of data obtained from filtered samples (using the standard 0.45 μ pore size). In this regard, the toxicologist must be aware of which hydrogeologic issues may impact his/her assessment so that they may be prompted to obtain appropriate direction from their hydrogeologist counterparts.

Some of the recurring issues of concern which cross both toxicological and hydrogeological disciplines are listed below. In general, they refer to these 'other considerations' which would require evaluation of the useability of filtered data. If these questions are indeed answerable, perhaps a how-to issue paper from the Forum which directs toxicologists on the implications of their choice of useable data might be appropriate. This might allow the toxicologist to rely on something tangible which reflects a consensus opinion from a fellow discipline.

- Is the 0.45 μ filter size appropriate for all aquifers? Is there a way to evaluate if this size is inappropriate and what size would be best for the aquifer being monitored? Are these procedures realistic given the RI/FS time frame and cost restrictions?
- Are there drinking water or other standards for turbidity measurements which reflect total suspended solids rather than bacterial colony densities? Would total dissolved solids be a better measure of the drinkability of the water?
- Target metals cited in Region III risk assessment guidance include manganese, iron and aluminum? Large discrepancies between unfiltered and filtered datasets from the same well mark this data as suspect. Are these metals suitable as target metals? What should be an allowable magnitude of the discrepancy?

- Should we evaluate only pH as an endpoint for 'aggressive' water? What other parameters might be responsible for corrosion of residential well casings or leaching from natural formations?

- What is an appropriate range to assess if the screened interval of a monitoring well provides sufficient yield for residential use? Can we assess perched aquifers if the yield is sufficient? Do we know from one or two sampling rounds during the RI/FS if the yield is sufficient, i.e. 'representative' of the aquifer/water source in question?

- Can we use groundwater aquifer classifications to aid risk assessment decision making? Are there any aquifers that are class 3? Does a mine pool constitute class 3?

I admit that questions such as those posed above may not have easy answers, however, there appears to be a need among toxicologists for written guidance which represents some form of consensus opinion on these issues. I thank the Forum for providing the opportunity to participate in the workgroup and raise these issues of concern. Our continued cooperation in this effort will hopefully lead to some promising results.

cc: Workgroup members
R. Steimle
D. Yeckle
K. Willis
C. Sweeney